Supplementary Figures 1-4

TopCap: a Tool to Quantify Soil Surface Topology and Subsurface Structure

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Supplementary Figure 1 Comparison of the output from SIOX (A) and TopCap (B) on porosity for three depth intervals (0-10, 10-20, & 20-30) and three pixel hole sizes (1, 2 & 6)
Supplementary Figure 2. Effect of rainfall duration (2, 5, 9 and 14 minutes: D2, D5, D9, D14) and soil type (Silty clay loam - ZCL; Sandy silt loam - SZL; Sandy loam - SL) on the unsaturated hydraulic conductivity ($K_{un}$) measured at -0.03 m pressure head. Different letters indicate differences at P < 0.05 according to LSD test performed on log-transformed data.

Supplementary Figure 3: Example of the output from TopCap from an undisturbed field soil. The soil texture is a sandy loam and was scanned at 30 µm voxel size. Several large, rounded macropores are visible near the surface which are attributable to earthworm activity. (a) raw greyscale CT image; b) binary out from TopCap with surface extracted; c) secondary binary image with porosity (green) below the surface segmented and extractable in sequential depth layers and d) 3D visualisation of soil surface (red).
Supplementary Figure 4: The effect of different closure coefficients (8-16) on the soil porosity as a function of depth